

ABSTRACT OF THE DISCLOSURE

A gaseous fluid microscale pump device and method for creating a flow of gaseous heat transfer fluid, such as air, wherein the pump device includes an ion generating region including one or more electron-emitting cathode electrodes for generating unipolar ions in the fluid, and a pumping region disposed downstream of the ion generating region and including pumping electrodes for generating an electric field in a manner that imparts motion to the ions and thus the heat transfer fluid relative to a heat-generating electronic component.